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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,627	12/12/2003	Kunihiko Kodaka	2003_1777A	1656

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EXAMINER	
HANLEY, SUSAN MARIE	

ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,627	KODAKA, KUNIHIKO	
	Examiner	Art Unit	
	Susan Hanley	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/12/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1 and 2 are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 030153368 (English language abstract) in view of Haraguchi et al. ("Haraguchi", 1969, abstract only), Takasaki et al. ("Takasaki", US 4,584,197) and Blinkovsky et al. ("Blinkovsky", US 6,465,209).

JP 030153368 discloses that the endo-type proteases and carboxypeptidases successfully decomposes the skins of fish eggs such that the fish eggs are used for food. It is noted in the instant claims that the intended use of the claimed process is to produce amino acids and peptides. The method of JP 030153368 produces amino acids and peptides because the skin of the fish eggs undergoes proteolysis. The employment of said proteolysis method to degrade the skin of fish eggs in order to made a fish egg food product meets the intended use.

JP 030153368 does not teach that the fish eggs having their skins are subjected to ozonolysis, the endoprotease is derived from *Bacillus* or the employment of a protease derived from *Aspergillus.*

Haraguchi teaches that fish skin is decontaminated by subjecting the fish to ozonolysis. The treatment kills molds, yeasts and bacteria and lengthens the storage life of the fish.

Takasaki discloses that the proteins of raw unprocessed fish or shell fish can be decomposed by a protease from *Bacillus subtilisin* and a protease derived from a Koji mold.

Blinkovsky teaches that it is desirable to hydrolyze the proteins of food products with at least an aminopeptidase that has high glycine-releasing activity (col. 2, lines 14-35). The advantage of using a aminopeptidase that releases high amounts of glycine is that said aminopeptidase exhibits a higher degree of hydrolysis of proteins, thus improving the organoleptic properties of the substrate (col. 3, lines 3-14). The aminopeptidase is preferably one produced by *Aspergillus oryzae* (col. 13, lines 53-55). Blinkovsky discloses that it is desirable to additionally employ subtilisin endoproteases (proteases from *Bacillus subtilisin*) and carboxypeptidases for the hydrolysis process (col. 10, lines 23-67 to col. 11, lines 1-37). The proteinaceous substrate can be of animal or vegetable origin and includes fish protein (col. 3, lines 53-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to decompose the skins of fish eggs, as taught by JP 030153368 , with an endoprotease that is derived from *Bacillus*, to additionally employ a protease derived from *Aspergillus* to effect the proteolysis and to subject the fish eggs having their skins to ozonolysis. The ordinary artisan would have been motivated to subject the fish eggs having their skins to ozonolysis because the product of the process taught by JP 030153368 is intended to serve as food and it is desirable to decontaminate food products of a fish origin in order to make them safer for human consumption and to increase the shelf life of the food product. The ordinary artisan would have had a reasonable expectation that one could successfully decontaminate the fish eggs having their skins, as disclosed by JP 030153368, to ozonolysis because Haraguchi teaches that the fish skin is decontaminated by ozonolysis. Fish skin and the skin of fish eggs are both composed of proteins including collagen and connective tissue. Thus one could reasonably expect that fish eggs could be decontaminated by the same process.

The ordinary artisan would have been motivated to employ an endoprotease derived from *Bacillus*, a glycine-releasing aminopeptidase derived from *Aspergillus* in addition to the carboxypeptidase taught by the base reference JP 030153368 to effect the hydrolysis of the skin of fish eggs because Blinkovsky teaches that it is desirable to use said combination for the proteolysis of fish proteins. Further,

the use of an aminopeptidase that exhibits a higher degree of the release of glycine improves the organoleptic properties of the substrate. The product of the process of JP 030153368 is intended as food. Thus, the ordinary artisan would have realized the use of an aminopeptidase derived from *Aspergillus* in combination with a *Bacillus*-derived endoproteases and a carboxypeptidase would produce a superior food product. The ordinary artisan would have had a reasonable expectation that said mixture of proteases could successfully hydrolyze the proteins of the skin of fish eggs to produce amino acids, peptides and fish eggs without skin because Blinkovsky discloses that the combination of enzymes is successful for hydrolyzing fish proteins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Hanley whose telephone number is 571-272-2508. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Susan Hanley
Patent Examiner
1651

JEAN C. WITZ
PRIMARY EXAMINER